What is claimed is:

1   1. A multiplexing apparatus comprising:

2   a plurality of terminal interface units, each

3   accommodating a line on a terminal side;

4   a buffer unit which is connected to each of said

5   terminal interface units by the point-to-point

6   connection; and

7   a network interface unit connected to said

8   buffer unit, the network interface unit

9   accommodating a line on a network side,

10   wherein

11   each of said terminal interface units converts

12   data received from the line on the terminal side to

13   a data block (hereinafter generically called packet

14   type data) as a certain unit, such as a cell and a

15   packet, which is determined by a protocol adopted

16   in said network, and transmits the packet type data

17   to the buffer unit; and each of said terminal

18   interface units disassembles packet type data

19   received from the buffer unit, and extracts data,

20   to transmit the data onto the corresponding line on

21   said terminal side,

22   said buffer unit has a packet type data storing

23   unit for storing the packet type data received from

24   a plurality of said terminal interface units, reads

25   out the packet type data sequentially from the packet

26   type data storing unit to transmit the packet type

27   data to said network interface unit; and selects one

28   of said terminal interface units in conformity with

29   a destination of the packet type data received from

30   said network interface unit to transmit the packet

31   type data to the terminal interface unit, and

32   said network interface unit synchronizes the

33   packet type data received from said buffer unit with

34   the line on said network side to transmit the

35   synchronized packet type data to the line on said

36   network side, and transmits the packet type data

37   received from the line on said network side to said

38   buffer unit.

1   2. The multiplexing apparatus according to claim 1,

2   wherein a transmission speed of the packet type data

3   between said buffer unit and said network interface

4   unit is coincident with a transmission speed of the

5   line on said network side.

1   3. The multiplexing apparatus according to claim 1,

2   wherein said buffer unit reads out the packet type

3   data from said packet type data storing unit

4   sequentially in a predetermined order of priorities

5   and transmits the packet type data to said network

6   interface unit.

1 4. The multiplexing apparatus according to claim 1,
2 wherein said packet type data storing unit has
3 buffers, each being prepared for the corresponding
4 one of said terminal interface units, and each of
5 said buffers is directly connected to the
6 corresponding terminal interface unit by the
7 point-to-point connection.

1 5. The multiplexing apparatus according to claim 1,
2 wherein the line on said network side is an ATM
3 (Asynchronous Transfer Mode) line, and said packet
4 type data is an ATM cell.

1 6. The multiplexing apparatus according to claim 1,
2 wherein the line on said network side is an IP
3 (Internet Protocol) line, and said packet type data
4 is an IP packet.